

Inverted Classroom with hybrid presence time

The pandemic-related switch to fully online teaching has resulted in many digital teaching materials, including a wealth of video material.

Perhaps you have already asked yourself how you can continue to use your videos and integrate them into your teaching in a didactically valuable way in the future?

The method of choice could be the *inverted classroom*, for example.

In this guide we would like to show you a compact overview of the options you can use for your teaching. Please note that these instructions will be updated regularly.

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Important notes are marked in yellow.

Additional information is marked in blue.

How does the inverted classroom method work?

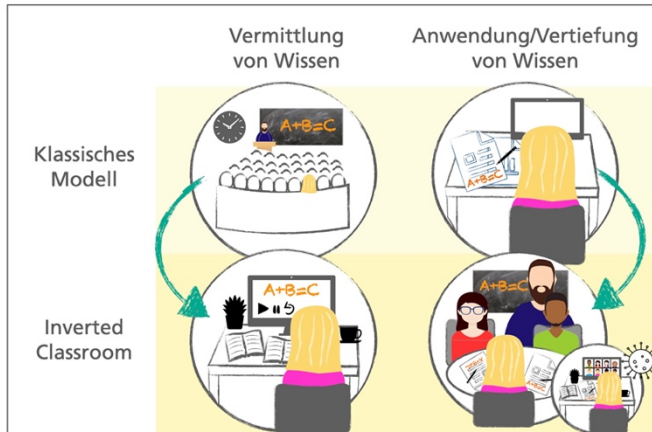


Fig. 1.: Comparison of the traditional teaching model at universities and the inverted classroom model

In the *inverted classroom*, the usual activities of the teaching process, such as the synchronous transfer of **knowledge** "inside" the (virtual) lecture hall and the asynchronous consolidation of knowledge, e.g. through homework "outside" the (virtual) lecture hall, are simply **reversed**:

This means the learning content is not taught on site at the university, but students use the **asynchronous phases** to acquire the relevant learning content independently.

The content is made available to students in advance in the form of instructional videos or lecture recordings, written documents, digital media or annotated slides. It is important that

the textbooks are well structured and that students are consistently guided through the learning material.

During the **synchronous phases** - whether in person at the university or in virtual form - knowledge is consolidated or deepened.

What **added value** does this model offer in contrast to the traditional approach?

Tab.: Overview of the added value of Inverted Classroom in the various learning phases

	For students	For teachers
Asynchronous phase "outside" of the lecture hall	<ul style="list-style-type: none"> - Self-directed learning - Individual learning pace - Free time management 	<ul style="list-style-type: none"> - Reuse and reprocessing of existing digital teaching materials - Less effort when adapting events
Synchronous phase "within" of the lecture hall	<ul style="list-style-type: none"> - Intensive exchange of knowledge - Intensive discussion of the course content - Clarification of questions and individual feedback - Promotion of important meta-skills such as discussion, presentation and teamwork 	<ul style="list-style-type: none"> - More time to consolidate content and exercises - Opportunity to specifically address your students' problems - Development and discussion of scientific issues at a different level

In the past semesters, due to the corona pandemic, KIT teaching had to take place mostly online. During this time, a lot of material for online teaching has been created, such as teaching videos, lecture recordings, material collections, etc., and forms a broad basis for reprocessing.

How do I reverse my apprenticeship?

Preparations for the start of the semester - asynchronous phase for acquiring knowledge

Divide your teaching materials into meaningful, smaller learning portions and place them in a structured manner in your ILIAS room. This helps students to keep an overview of the content in their self-study phase and supports them in managing their time. Additional material, such as commented slides, means little effort and a lot of benefit. A good mix of media appeals to all learning types and thus makes the learning process easier.

Make it clear to your students which learning goals are to be achieved with the respective materials and provide assistance in the form of quiz questions, worksheets and/or online tests to achieve these learning goals.

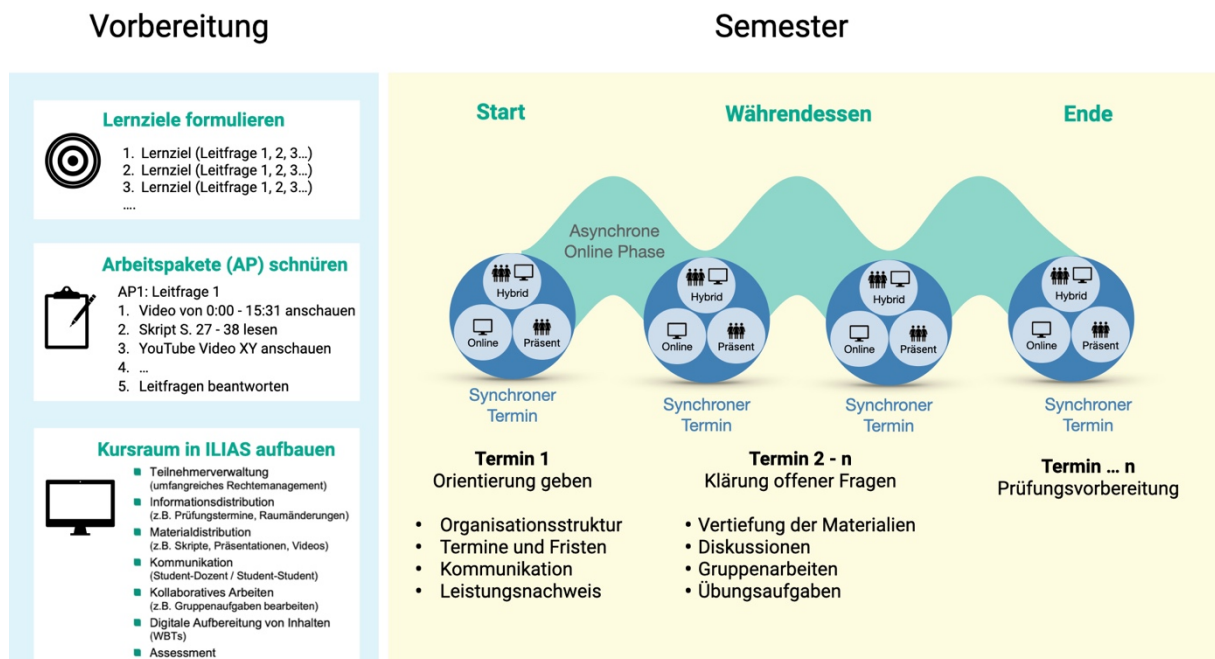




















Fig.2: Short instructions for preparing the learning content for the start of the semester and visual representation of the synchronous and asynchronous phase.

At the beginning of the semester – provide orientation


Starting the semester with a synchronous online event makes it possible to clarify all organizational and content-related questions, such as:



- The concept of the inverted classroom and what is important - if the participants can estimate what they will face methodologically and organizationally, they can concentrate better on the content
(-> for scenario A , B   and C  - see page 5-6)
- Organizing materials on ILIAS
(->for scenario A , B   and C  see page 5-6)
- Clarification of dates and deadlines as well as any proof of performance that may need to be provided
(->for scenario A , B   and C  see page 5-6)
- Create transparency when grouping is necessary for the hybrid scenario in the synchronous phase (who works online, who comes to present appointments when, when will the change take place)
(->for scenario B  , see page 5-6)
- Communication channels between teachers and students - (also) offer digital consultation hours. There will probably be students in your course who cannot attend in person for risk reasons
(->for scenario A , B   and C , see page 5-6)

Use of synchronous phases – everyone together at the same time

The synchronous phases benefit from the fact that teachers and students are present at the same time, be it in the lecture hall or in the online conference room. This phase is therefore particularly suitable for intensive exchange and collaboration.

The synchronous phase is used to deepen what has been learned or to clarify any uncertainties. This can take place with the entire student group or in small groups; depending on what the current Corona regulation specifies and allows.

In times of high incidence, the synchronous appointments can be implemented with a purely online event (**see scenario A** ).

If the current situation makes it possible for a certain number of students to meet face-to-face, a hybrid teaching scenario for the synchronous appointments is recommended (**see Scenario B**  .

Here you will find some tips and advice for the different ways to carry out the synchronous phase.



Scenario A:
Purely online event

Organisation	Create an online conference room on Zoom or MS Teams Ensure all students have access to it
Tools for:	
<input type="checkbox"/> Discussions and exchanges	Audio/video conference in Zoom, text chat in Zoom, breakout rooms, forum in ILIAS
<input type="checkbox"/> Short interactions	Pingo, Kahoot!, ILIAS Live Voting
<input type="checkbox"/> Collaborative work	Whiteboards in Zoom and MS Teams



Scenario B:
Hybrid teaching: simultaneous face-to-face teaching and *Distance-Learning*

Organisation	Technical infrastructure must be available or organized (suitcase solution for seminar rooms – reserve and borrow) Allow time for setup and dismantling
Formation of groups:	Divide students into groups for face-to-face and online participation and define changes Ensure that both groups are treated and supported equally
Tips for successful implementation:	Select a student as a speaker for fellow students who are connected online - keep an eye on the chat and present questions via microphone Do not create mixed groups (online and face-to-face) for group work - the different (technical) requirements of the students on site make communication with each other more difficult Make sure that everyone involved receives the same information - for example through (event) logs that are kept by students and made accessible to everyone in the LMS. Participants on the computer can also take part in the seminar - e.g. by using a room microphone, repeating questions, writing down answers, etc.

Technical requirements: The required technical infrastructure must be organized or available
Transparent planning is necessary so that students know when their turn is and where

Tools for

Discussions and exchanges

Online-Tools:

- Audio/video conference
- Breakout rooms for group work
- Whiteboards in Zoom and MS Teams

Present methods:

- Group works: open question rounds, active plenum, archeology congress, beehive
- Partner work: marble groups, think-pair-share, fishbowl
- Individual work: worksheet, reading phase, one-minute paper

Short interactions

Pingo, Kahoot!



Scenario C:

Purely face-to-face event

Organisation seminar room, lecture hall, ...

Methods for:

- Group work open question rounds, active plenum, archeology congress, beehive
- Partner work marble groups, think-pair-share, fishbowl
- Individual work worksheet, reading phase, one-minute paper

Exam preparation

So that students know what to expect in the (online) exam, securing their results is essential. At the end of the semester, what you have learned can be discussed again in summary. A (controlled) question and answer session often proves to be practical, as the students often identify and close gaps in their knowledge.

Offering virtual consultation hours can also support students. Both question and answer sessions and consultation hours can be outsourced to the forum in ILIAS if necessary.

Tips and tricks

Christian Spannagel, professor of mathematics and mathematics didactics with a focus on computer science and implementation of new media at the Heidelberg University of Education, has been successfully using the inverted classroom method in his teaching for many years.

- Christian Spannagel explains how a successful start to the inverted classroom method with students can be achieved in the following video section:
<https://youtu.be/ws3liOeHWBc?t=1598> (26:40 – 28:45)

In the following video sections, Christoph Spannagel provides useful information on the following topics:

- How do I get the second week of the *inverted classroom* semester off to a good start, how do I ensure that my students come prepared and what could synchronous phases look like as part of an *inverted classroom* concept?
<https://youtu.be/ws3liOeHWBc?t=1727> (28:47 – 35:10)
- How can students be encouraged to engage actively with videos?
<https://youtu.be/3ddbzXKfTTE?t=355> (5:55 – 7:53)
- How can I work with large groups? <https://youtube.be/Dh84n80g2Bs?t=4>

Next steps and help

- Learn how to create and deliver instructional videos here:
<https://www.zml.kit.edu/corona-screenrecording.php>
- How to use Zoom is described here:
<https://www.zml.kit.edu/corona-live-vortrag.php>
- You can take a course on creating ILIAS courses here:
https://ilias.studium.kit.edu/goto.php?target=crs_177107&client_id=produktiv
- Instructions for creating the course room can be found here:
https://www.zml.kit.edu/downloads/2020_ILIAS_Kurserstellung.pdf
- Instructions for the course room settings can be found here:
https://www.zml.kit.edu/downloads/2020_ILIAS_Kurseinstellungen.pdf
- You can find out how to upload and structure materials in ILIAS here:
https://www.zml.kit.edu/downloads/2020_ILIAS_Materialien_hochladen.pdf
- This describes step by step how you can optimally design the information structure in the ILIAS course: https://www.zml.kit.edu/downloads/2020_ILIAS_Informationsdistribution.pdf
- Can't load videos into ILIAS? You can find help here:
https://www.zml.kit.edu/downloads/Anleitung_OpenCastPlugin.pdf
- Here you will find out how to create exercises in ILIAS:
https://www.zml.kit.edu/downloads/2020_ILIAS_Uebungen.pdf
- And here how you can create tests:
https://www.zml.kit.edu/downloads/2020_ILIAS_Testverfahren_Tests.pdf
- Here you will find a [Anleitung zu Fragetypen in ILIAS](#).
- The help and support area for ILIAS and on ILIAS can be found here:
https://ilias.studium.kit.edu/ilias.php?ref_id=52&cmd=render&cmdClass=ilrepositorygui&cmdNode=uk&baseClass=ilRepositoryGUI

Last Update 06.09.2021

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Impressum

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